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EXAMINER

BELL, WILLIAM P

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,281	Applicant(s) MIYAGI ET AL.	
	Examiner WILLIAM P. BELL	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/15/2006, 4/2/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 8-22 in the reply filed on 13 February 2009 is acknowledged.
2. Claims 1-8 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 13 February 2009.

Note Regarding Use of Translation

3. In this Office action, reference is made to International Patent Application Publication No. WO 01/53224, which was published in French. An English translation of this document has been provided, and all citations given in this Action refer to the English translation, not the original French document.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 9-14, 18, 20, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Cote (International Patent Application Publication No. WO 01/53224).

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Regarding claim 9, Cote teaches a bottle mold (see page 7, lines 13-17) comprising inner and outer members (see page 6, lines 18-19), for forming a contour surface part (see Figure 1, wherein insert 2 forms a contour surface part of the bottle to be formed in the mold) and an outer peripheral part of the mold (see Figure 1, wherein casing 1 forms an outer peripheral part of the mold), and further comprising a cooling path (see page 8, line 19 and cooling channels 3 in Figure 1) that includes an abutting path formed between abutting surfaces of the inner and outer members (see Figure 1, wherein cooling channels 3 are formed at the abutting surface between insert 2 and casing 1), wherein the cooling path has a vent and an exhaust outlet at an outer peripheral surface of the mold (see page 9, line 5 and Figure 1, wherein openings which serve as vent and exhaust are provided in casing 1 for supplying and removing cooling media to cooling channels 3). Cote teaches casting of the insert and casing (see page 7, lines 9-10), but the mold taught by Cote would be structurally equivalent to the claimed invention whether casting or other forming methods were used, as the claimed process imparts no structural requirements to the mold.

Regarding claim 10, Cote teaches a bottle mold (see page 7, lines 13-17) comprising inner and outer members (see page 6, lines 18-19) and forming a contour surface part (see Figure 1, wherein insert 2 forms a contour surface part of the bottle to be formed in the mold) and an outer peripheral part of the mold (see Figure 1, wherein casing 1 forms an outer peripheral part of the mold), and further comprising a cooling path (see page 8, line 19 and cooling channels 3 in Figure 1) that includes an abutting path formed between abutting surfaces of the inner and outer members (see Figure 1,

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wherein cooling channels 3 are formed at the abutting surface between insert 2 and casing 1), and a through path of one or more straight path sections formed in the inner member and/or the outer member in communication with the abutting path (see Figure 1, wherein a total of three straight path sections are formed in casing 1 in communication with each cooling channel 3), wherein the cooling path has a vent and an exhaust outlet at an outer peripheral surface of the mold (see page 9, line 5 and Figure 1, wherein openings which serve as vent and exhaust are provided in casing 1 for supplying and removing cooling media to cooling channels 3). Cote teaches casting of the insert and casing (see page 7, lines 9-10), but the mold taught by Cote would be structurally equivalent to the claimed invention whether casting or other forming methods were used, as the claimed process imparts no structural requirements to the mold.

Regarding claim 11, Cote teaches a bottle mold (see page 7, lines 13-17) comprising inner and outer members (see page 6, lines 18-19) and forming a contour surface part (see Figure 2, wherein insert 2 forms a contour surface part of the bottle to be formed in the mold) and an outer peripheral part of the mold (see Figure 2, wherein casing 1 forms an outer peripheral part of the mold), and further comprising a cooling path (see page 8, line 19 and cooling channels 3 in Figure 2) that includes an abutting path formed between abutting surfaces of the inner and outer members (see Figure 2, wherein cooling channels 3 are formed at the abutting surface between insert 2 and casing 1), and a through path having two or more straight path sections formed in the inner member and/or the outer member to be in communication with the abutting path

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(see Figure 2, wherein a total of two straight path sections are formed in casing 1 in communication with each cooling channel 3), the cooling path substantially conforming to a non-straight shape of the contour surface in the axial direction (see Figure 2, wherein the shapes of insert 2 and casing 1 have been modified relative to that shown in Figure 1 such that the cooling channels 3 formed at the abutting surface between the insert and casing and the connecting channels substantially conform to the non-straight shape of the contour surface; see also page 9, lines 5-7, wherein modification of the cross section of the channels to maintain an even thermal gradient is taught), wherein the cooling path has a vent and an exhaust outlet at an outer peripheral surface of the mold (see page 9, line 5 and Figure 1, wherein openings which serve as vent and exhaust are provided in casing 1 for supplying and removing cooling media to cooling channels 3). Cote teaches casting of the insert and casing (see page 7, lines 9-10), but the mold taught by Cote would be structurally equivalent to the claimed invention whether casting or other forming methods were used, as the claimed process imparts no structural requirements to the mold.

Regarding claim 12, Cote teaches a bottle mold (see page 7, lines 13-17) comprising inner and outer members (see page 6, lines 18-19) and forming a contour surface part (see Figure 1, wherein insert 2 forms a contour surface part of the bottle to be formed in the mold) and an outer peripheral part of the mold (see Figure 1, wherein casing 1 forms an outer peripheral part of the mold), and further comprising a cooling path (see page 8, line 19 and cooling channels 3 in Figure 1) that includes an abutting path formed between abutting surfaces (see Figure 1, wherein cooling channels 3 are

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formed at the abutting surface between insert 2 and casing 1) of the inner member made a Ni-based alloy (see page 8, lines 4-6) and the outer member, and a through path formed in the inner member and/or the outer member in communication with the abutting path (see Figure 1, wherein a total of three straight path sections are formed in casing 1 in communication with each cooling channel 3), wherein the cooling path has a vent and an exhaust outlet at an outer peripheral surface of the mold (see page 9, line 5 and Figure 1, wherein openings which serve as vent and exhaust are provided in casing 1 for supplying and removing cooling media to cooling channels 3). Cote teaches casting of the insert and casing (see page 7, lines 9-10), but the mold taught by Cote would be structurally equivalent to the claimed invention whether casting or other forming methods were used, as the claimed process imparts no structural requirements to the mold.

Regarding claim 13, Cote teaches a bottle mold (see page 7, lines 13-17) comprising inner and outer members (see page 6, lines 18-19) and forming a contour surface part (see Figure 1, wherein insert 2 forms a contour surface part of the bottle to be formed in the mold) and an outer peripheral part of the mold (see Figure 1, wherein casing 1 forms an outer peripheral part of the mold), and further comprising a cooling path (see page 8, line 19 and cooling channels 3 in Figure 1) that includes an abutting path formed between abutting surfaces (see Figure 1, wherein cooling channels 3 are formed at the abutting surface between insert 2 and casing 1) of the inner member made a Ni-based alloy (see page 8, lines 4-6) and the outer member made of any one of cast iron, stainless steel, and a copper alloy (see page 7, line 10), and a through path

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formed in the inner member and/or the outer member in communication with the abutting path (see Figure 1, wherein a total of three straight path sections are formed in casing 1 in communication with each cooling channel 3), wherein the cooling path has a vent and an exhaust outlet at an outer peripheral surface of the mold (see page 9, line 5 and Figure 1, wherein openings which serve as vent and exhaust are provided in casing 1 for supplying and removing cooling media to cooling channels 3). Cote teaches casting of the insert and casing (see page 7, lines 9-10), but the mold taught by Cote would be structurally equivalent to the claimed invention whether casting or other forming methods were used, as the claimed process imparts no structural requirements to the mold.

Regarding claim 14, Cote teaches a bottle mold wherein the Ni-based alloy contains silicon, boron, or both of silicon and boron as an active ingredient (see page 8, lines 11 and 13).

Regarding claim 18, Cote teaches a bottle mold wherein a hollow part is formed between the abutting surfaces (see Figure 1, wherein cooling channels 3 constitute a hollow part formed between the abutting surfaces of insert 2 and casing 1). Cote teaches casting of the insert and casing (see page 7, lines 9-10), but the mold taught by Cote would be structurally equivalent to the claimed invention whether casting or other forming methods were used, as the claimed process imparts no structural requirements to the mold.

Regarding claim 20, Cote teaches a bottle mold wherein the inner member is supported such that it would be removed from and attached to the outer member from above (see Figure 2, wherein a lip is provided on insert 2 such that it nests in casing 1).

Regarding claim 22, Cote teaches a bottle mold further comprising a lip mold held between the inner and outer members of the mold (see page 9 lines 18-20, wherein the mold ring is held by wedge section 6 and is a lip mold which forms the lip or ring at the mouth of the formed bottle; see wedge section 6 in Figure 2). Since the ring of the bottle is physically connected to the body of the bottle, the mold ring must be in communication with the contour surface of the mold which forms the body of the bottle. Cote teaches that the cooling channels 3 in Figure 2 open in wedge section 6, which contains the mold ring, and serve to cool the ring mold (see page 10, lines 5-6).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cote as applied to claim 9 above, and further in view of Imamura (U.S. Patent No. 5,656,104). Cote is silent regarding the roughness of the contour surface of the mold. Regarding claim 15, Imamura teaches a glass mold wherein the surface of the mold which contacts the glass during formation is roughened by sandblasting (see column

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14, lines 56-60). One of skill in the art knows that sandblasting results in an irregular surface. Regarding claim 16, Imamura teaches a glass mold wherein the surface roughness is in a range of from 1.0 μm to 8.0 μm (see column 14, lines 57-63). It would have been obvious to one of ordinary skill in the art to have modified the glass mold taught by Cote with the roughened surface taught by Imamura for the benefit of “avoiding the occurrence of cracking of the glass even in the case of operation without the application of any oil” (see Imamura, column 14, lines 41-43).

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cote as applied to claim 1 above, and further in view of Longo (U.S. Patent No. 3,305,326). Cote teaches a bottle mold wherein the inner member is made of cast iron (see page 7, line 9), but does not teach a surface thereof containing chromium carbide or chromium nitride as a main component. Longo teaches a flame spray material suitable for coating of iron (see column 3, lines 47-48) comprising chromium carbide (see column 3, line 70) as a major component (see column 4, lines 2-5). It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the cast iron bottle mold taught by Cote with the coating containing chromium carbide taught by Longo for the benefit of providing a wear-resistant surface on the molding surface (see Longo, column 2, lines 6-9).

9. Claims 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cote. Regarding claim 19, Cote teaches a bottle mold wherein the inner and outer members are detachably combined (see page 7, lines 1-2) with a screw, but does not teach that the outer member is radially fixed with a bolt from the outer circumferential

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surface of the outer member at the circumferential center thereof. A bolt is a commonly used substitute for the screw taught by Cote and would have been obvious to one of ordinary skill in the art at the time of the invention. The placement of a bolt or screw as recited by Applicant in the bottle mold taught by Cote involves only routine skill and would have been obvious to one of ordinary skill in the art at the time of the invention.

Regarding claim 21, Cote teaches a bottle mold wherein the inner and outer members have fitting portions that fit the inner member to the outer member from above for support (see Figure 2, wherein a lip is provided on insert 2 such that it nests in a corresponding groove in casing 1 such that the insert and casing fit together and the insert is supported above the casing). The placement of a bolt or screw as recited by Applicant in the bottle mold taught by Cote involves only routine skill and would have been obvious to one of ordinary skill in the art at the time of the invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM P. BELL whose telephone number is (571)270-7067. The examiner can normally be reached on Monday - Thursday, 8:00 am - 5:30 pm; Alternating Fridays, 8:00 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Wpb

/Richard Crispino/
Supervisory Patent Examiner, Art Unit 1791